Feb. 1, 1966 A. P. MILLER 3,232,299

CIGARETTE HOLDER

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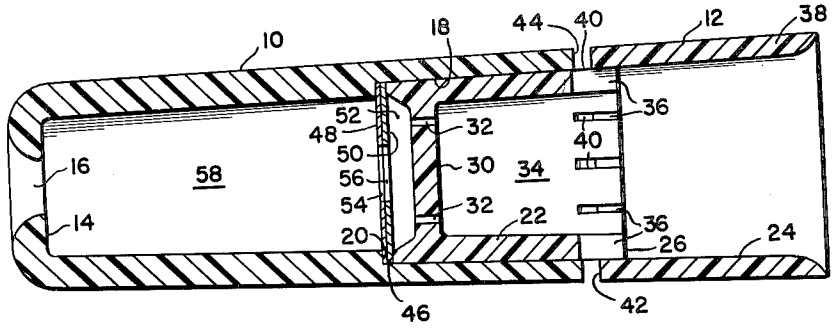


FIG. 1.

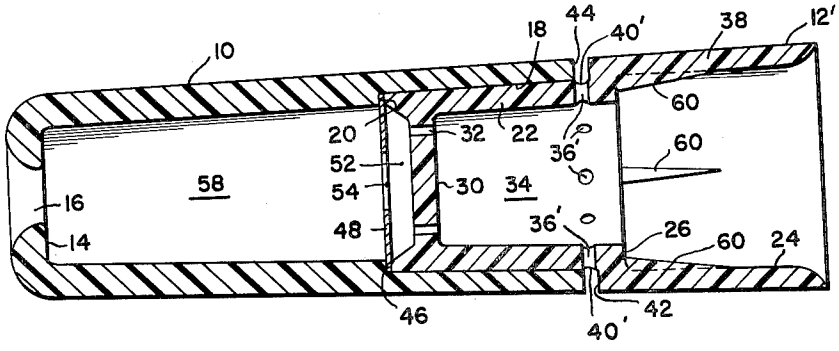


FIG. 2.

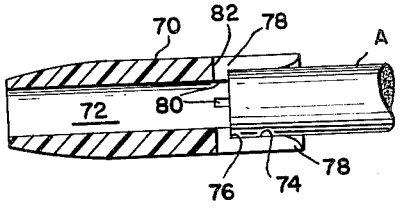


FIG. 3.

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CIGARETTE HOLDER

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1 Claim. (Cl. 131—198)

This invention relates to a cigarette holder which is constructed and adapted for the purpose of minimizing the harmful health effects involved in the smoking of cigarettes.

The use of smoking tobacco is today both well known and widespread in spite of the fact that it is recognized by some authorities that smoking is injurious to the delicate membranes of the nose, throat, and lungs of the smoker and is credited with inducing cancer of the lips, mouth, throat and lungs, and with inducing heart diseases.

The principal products of tobacco smoke are carbon dioxide, water vapor, carbon monoxide, acid fumes, nicotine vapors, and tars. The first two of these products are not generally regarded as harmful to the smoker. The remainder of these products are generally considered harmful and even though only a small proportion of these products resulting from the combustion of the entire cigarette actually enter the smoker's system, that quantity is sufficient to be considered by some authorities as being harmful to the smoker.

Various means are employed to reduce the harmful effects of these products of combustion. Various chemicals have been employed in admixture with the tobacco in an endeavor to nullify the harmful ingredients of the smoke. Some of these chemicals, while apparently nullifying the harmful smoke ingredients, release upon combustion equally toxic substances or destroy or impair the aroma that is delighted in by tobacco smokers. Certain other neutralizing agents are unstable and, by the time the cigarette is consumed, these agents have decomposed and fail to accomplish their purpose. Other agents cause unpleasant taste or are for other reasons undesirably employed. Numerous types of mechanical filters have been devised. These filters generally add materially to the cost of manufacture of the cigarette and many of them are of little value.

It is the object of my invention to provide a cigarette holder construction which prevents the delivery of substantial quantities of the harmful tobacco smoke constituents during the smoking of a cigarette whereby cigarette smoking is made less harmful.

The harmful tars in the smoke stream are reduced by the use of the cigarette holder in accordance with this invention because the holder is constructed to maintain consistently a relatively low temperature in the burning cone of the cigarette. An advantage of the holder is that no cartridges, filters, crystals, liquids, or tar traps are required. Moreover, the holder permits the production of a small amount of relatively harmless, low temperature tars which provide a cigarette aroma and taste. Accordingly, the pleasure and taste in smoking is not affected adversely.

In accordance with the present invention, the cigarette holder has a portion adapted to receive the end of the cigarette and includes a hollow tip portion adjacent the end of the cigarette. The tip portion receives smoke flowing from the burning cigarette during smoking and passageway means are provided through which air from the outside of the cigarette may pass into the hollow tip in response to the smoker applying suction to the interior of the tip. Since suction in the tip draws air from the outside, the amount of air drawn through the burning portion of the cigarette is less than the amount that would be drawn if the entire suction were applied

to the cigarette. Accordingly, less oxygen is drawn into the burning portion of the cigarette so that the burning temperatures are less and generally will not be excessive. This lowering of the burning temperature causes a reduction in the production of harmful tars in the burning zone. Moreover, since the smoke passing through the tobacco is at a lower temperature, there will be less condensation of tobacco tars. The introduction of outside air can prevent the transmission of substantial quantities of the harmful tars if desired.

Another feature of the invention is that the holder is adjustable to control the amount of outside air that is directed into the tip of the holder. Accordingly, the smoker may set the holder to provide a variety of smoking conditions, with more or less outside air, as desired.

The above and other objects and features of the invention will become apparent from the following description read in conjunction with the accompanying drawings, in which:

FIGURE 1 is an axial section through a cigarette holder in accordance with this invention;

FIGURE 2 is an axial section through another form of cigarette holder in accordance with this invention; and

FIGURE 3 is an axial section through a third form of cigarette holder in accordance with this invention.

Referring to FIGURE 1, the cigarette holder shown therein comprises a tubular bit **10** and a tubular holder member **12**. Bit **10** and holder member **12** are tapered radially inwardly toward the outer or left end of bit **10** as viewed in FIGURE 1. The outer end of bit **10** has an end wall **14** provided with a central opening **16**. The inner or right end of bit **10** as viewed in FIGURE 1 has an enlarged bore **18** terminating at an annular shoulder **20**. Bore **18** is tapered in the same degree as the bit **10** and is adapted to receive a correspondingly tapered reduced diameter portion **22** of the holder member **12**. The bore **18** and portion **22** are constructed to engage with a press fit so that the bit **10** and holder member **12** may be assembled securely in the position shown in FIGURE 1. However, when desired, the bit **10** and the holder member **12** may be separated manually by the application of a relatively small separating force thereto. The press fit is such that the holder member **12** is rotatable with respect to the bit **10** by the application of a rotary force by the smoker in separating these members as is common practice. Hence, the smoker may, as desired, assemble and disassemble the bit **10** and holder member **12** easily.

The outer or right end of holder member **12** as viewed in FIGURE 1 is provided with a bore **24** rounded at the outer end thereof and terminating at an annular shoulder **26**. Bore **24** is adapted to receive the tip of a cigarette snugly, with the shoulder **26** serving as a stop to limit the inward movement of the cigarette. The inner or left end of the holder member **12** is provided with a wall **30** intersecting the axial passage therethrough. Wall **30** has a plurality of openings **32** extending axially therethrough, preferably six openings being provided. The openings **32** are spaced circumferentially equidistantly in a circular pattern.

The holder member **12** defines a frusto-conical cylindrical chamber **34** within the reduced diameter portion **22**, this chamber **34** being immediately downstream of a cigarette which has been inserted in the bore **24**. The chamber **34** may be of another form, such as cylindrical. Accordingly, chamber **34** will receive smoke passing from the cigarette during smoking thereof. The cigarette holder includes passageway means providing communication between the exterior of the cigarette holder and the chamber **34** for the passage of outside air. Such passageway means comprises eight slots **36** extending radially through

the wall of the reduced diameter portion 22. Slots 36 are circumferentially equally spaced and extend from the shoulder 26 inwardly to the left in an axial direction. The holder member 12 has an enlarged diameter portion 38 exteriorly surrounding the outer or right ends of the slots 36. Portion 38 terminates short of the inner or left ends of the slots 36 so that a plurality of rectangular ports 40 are provided, an annular shoulder 42 of portion 38 providing the end of each of these ports 40. The other end of the ports 40 is provided by the annular end 44 of bit 10, this end also normally overlying the slots 36 and being opposed to the shoulder 42.

At its one end the holder member 12 has an annular shoulder 46 in opposed relationship with the shoulder 20 of tip 10. A pair of discs 48 and 50 are adapted to be positioned between the opposed shoulders 20 and 46 to axially space the same. Discs 48 and 50 preferably have different thicknesses so that the shoulders 20 and 46 may be spaced a variety of distances. Preferably, the disc 50 is twice as thick as the disc 48.

It will be apparent that the shoulders 20 and 46 may be positioned in four different positions by the construction shown in FIGURE 1. Hence, the shoulder 46 may be positioned in contact with shoulder 20 when no discs are used, may be spaced from shoulder 20 the thickness of disc 48 when disc 48 is used, may be spaced from shoulder 20 the thickness of disc 50 when disc 50 is used, or may be spaced from shoulder 20 the combined thickness of discs 48 and 50 when both discs are used.

It will be apparent that the spacing between shoulder 42 and end 44 will be directly related to the spacing between the shoulders 20 and 46. As can be seen in the drawing, the construction is such that with the shoulders 20 and 46 in contact, the end 44 will overlie the ports 40. It is noted that an annular groove is defined between the end 44 and the shoulder 42, the ports communicating with such groove. Moreover, the spacial relationship between the shoulder 42 and end 44 will determine the size of the ports 40 through which the outside air enters the chamber 34. Accordingly, the size of the ports 40 is adjusted by changing the arrangement of the discs that are positioned between shoulders 20 and 46. It will be evident that this change may be made quickly and easily. The smoker simply separates the bit 10 and holder member 12, inserts the disc desired, and reassemblies the bit 10 and holder member 12.

The wall 30 is recessed so that a chamber 52 is provided downstream of wall 30. Discs 48 and 50 have aligned central openings 54 and 56, respectively, which provide communication between chamber 52 and a chamber 58 in the downstream end of tip 10.

It has been found that for optimum results the total cross-sectional area of the eight ports 40 should be of the order of 0.0020 square inch, although satisfactory results may be obtained within the range of from 0.0010 to 0.0025 square inch. This area, of course, is a function of the number, the dimensions and the configuration of the ports 40. The size of the ports 40 may be varied in accordance with the number of discs 48, 50 inserted within the holder. Accordingly, the smoker is able to vary the characteristics of the smoke by providing the cigarette holder with a different number or size of the discs.

During the smoking of a cigarette positioned within the bore 24, smoke is drawn through the cigarette into chamber 34 by reason of the partial vacuum or negative pressure produced within the holder in response to the application of suction by the smoker. At the same time, outside air is drawn through the ports 40 into the chamber 34. Since the partial vacuum applied to chamber 34 is partly satisfied by outside air passing through ports 40, there is a lowering of the cigarette burning temperature and a reduction in tar formation as previously described. The cigarette holder construction produces an effective mixture of the outside air and smoke in chamber 34 by reason of the turbulent flow produced by the jets of outside air entering radially through the ports 40. The entrance and mixture of air with the smoke will reduce the temperature of the combustion products so that the tars coagulate. The combustion products pass from the chamber 34 through the openings 32 into the chamber 52. The combustion products pass from the chamber 52 through the central openings of the discs into the chamber 58 from which the products pass through the opening 16 into the smoker's mouth. During this flow, some of the tars adhere to the surface of the openings 32, the wall 30, the discs 48, 50 and the tip 10.

A cigarette holder constructed as shown in FIGURE 1 can reduce the flow of the tars therethrough. Moreover, since some of the tars which are formed are collected on various surface areas on the interior of the holder, the tobacco aroma provided thereby is retained, this aroma being pleasing to the smoker.

It will be evident that the cigarette holder may be constructed with various dimensions and may have a different number of ports 40 and openings 32. However, one satisfactory design is that shown in the drawings in which there are provided eight ports 40 and six openings 32. In this form of the invention the cigarette holder is approximately one and a quarter inches in length and three-eighths of an inch in diameter at the cigarette receiving end, the openings 32 being 0.028 inch in diameter and the slots 36 being 0.016 inch in width. The taper is very slight and may be of the order of one and a half degrees.

The holder may be made of various materials, such as metal or plastic. Preferably, the holder is made of one of the many synthetic resins. The holder can be mass produced by commercial injection molding machinery so that the cost of each holder will be very low.

The form of the invention shown in FIGURE 2 is similar to that shown in FIGURE 1 so that corresponding parts have been designated with like reference numerals. One modification in this form of the invention is that the passageway means for the outside air takes the form of eight cylindrical holes 36′ extending radially through the portion 22 of holder member 12′ and communicating with the exterior of the holder at a location adjacent the shoulder 42. The holes 36′ provide inlet ports 40′ which are varied in size by the positioning of the end 44 of tip 10, which end can overlie the ports 40′ by various amounts depending on the number and size of the discs positioned between the shoulders 20 and 46. The holder shown in FIGURE 2 may be adjusted to vary the intake of outside air in the same manner as the holder shown in FIGURE 1.

In addition, the holder is provided with a plurality of tapered ribs 60 extending axially outwardly from shoulder 26 toward the open end of holder member 12′. Although various numbers of the ribs may be used, four circumferentially equally spaced ribs are preferable. The ribs 60 serve to deflect the cigarette wrapper radially inwardly as it is inserted into the bore 24. Accordingly, the ribs tend to frictionally engage the exterior of the cigarette and hold the cigarette firmly within the bore 24. Also, by deflecting the cigarette wrapper, the ribs 60 tend to make the wrapper taut whereby there is less tendency of wrinkles being formed as the cigarette is inserted into the holder. The formation of wrinkles may provide passageways through which outside air may enter the chamber 34 through the end of the holder which could affect the amount of intake of outside air and change the characteristics of the smoke desired by the smoker. Furthermore, the ribs 60 tend to compact the tobacco at the end of the cigarette so that there is less tendency of the tobacco coming loose from the cigarette and entering the chamber 34 and possibly blocking the openings 32.

It will be evident that the cigarette holder shown in FIGURE 2 will function in the same manner as the holder shown in FIGURE 1 during the smoking of a cigarette, the smoke entering chamber 34 from the cigarette and the outside air entering the chamber 34 through the ports 40′.

The cigarette holder shown in FIGURE 3 comprises a one-piece holder and bit member **70**. The holder **70** is tubular so that an axial passageway **72** extends therethrough. An enlarged bore **74** is provided in one end of holder **70**, this bore having rounded ends and being adapted to receive the end of a cigarette. The bore **74** terminates at an annular shoulder **76** which serves as a stop to limit the extent of insertion of the cigarette "A."

The outside air passageway means comprises a plurality of slots **78** which extend axially from the cigarette receiving end of holder **70** to a location beyond the shoulder **76**. The slots **78** extend radially through the holder **70** and define a plurality of rectangular inlet ports **80** between the shoulder **76** and the inner end **82** of the slots **78**. This slotted construction permits the manufacture of the holder with a simple one operation molding process. The molding process is also made simpler by reason of the slots extending completely radially through the holder **70**.

It will be evident that the cigarette holder shown in FIGURE 3 will function in a manner similar to the holder previously described during the smoking of a cigarette, with smoke entering the chamber **72** from the cigarette and outside air entering the chamber **72** through the ports **80**.

It will be understood that various changes and modifications of the described forms of the invention may be made without departing from the scope of the invention. For example, the discs may be made as part of the tip portion. Also, the holders may be adapted for the smoking of cigars. Accordingly, it is not desired to be limited except as required by the following claim.

I claim:

A holder for use in the smoking of cigarettes and the like comprising a tubular bit member adapted to be held in a smoker's mouth, and a tubular holder member having a portion adapted to hold the article to be smoked, one of said members being mounted telescopically within the other and providing a chamber communicating with smoke passing from the smoking article held in said portion, said one member having passageway means therein for the flow of outside air into said chamber, said passageway means including inlet port means, said members

being movable axially relative to each other to a plurality of positions of different axial relationship, said other member having means movable across said inlet port means for varying the size thereof in accordance with said relative positions of said members, said members having opposed shoulders for limiting the relative movement thereof in an axial direction at one of said relative positions, said means movable across the inlet port means comprising a surface of said other member, said other member being constructed so that said surface thereof is spaced from said movement limiting shoulder thereof a distance such that said surface covers at least a portion of said inlet port means when said opposed shoulders are in contact, and at least one spacer member removably positioned between said shoulders, said shoulders being located at a terminal portion of said one member, said members being separable whereby spacer members may be removed and changed, said one member having an annular wall portion cooperating with said surface of said other member to define an annular groove therebetween extending around the exterior of the holder, said inlet port means communicating with said annular groove.

References Cited by the Examiner

UNITED STATES PATENTS

332,858	12/1885	Aikman	131—215 X
882,825	3/1908	Heald.	
986,950	3/1911	Smiley	131—188
1,015,723	1/1912	Blackwood	131—198
1,630,243	5/1927	Rosan	131—198
2,603,222	7/1952	Brooks	131—198
2,693,193	11/1954	Pelletier.	
2,791,224	5/1957	Jones	131—198
2,869,883	1/1959	Dunbar.	
2,967,528	1/1961	Kelter	131—198

FOREIGN PATENTS

94,647	2/1939	Sweden.
120,320	5/1927	Switzerland.

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